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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact Upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

To: The Commission

REPLY

Cannell Cleveland, L.P. ("Cannell"), licensee of Television Station WUAB(TV), Lorain, Ohio, by its attorneys, hereby replies to the Opposition filed by Detroit Educational Television Foundation ("DET") against Cannell's Petition for Reconsideration and Clarification and the Supplement thereto (collectively, the "Petition") of the FCC's *Sixth Report and Order* in the above-captioned proceeding.[1/]

I. Introduction.

Cannell demonstrated in its Petition that WUAB(TV)'s NTSC operations on Channel 43 were likely to receive substantial interference from the digital television ("DTV") operations of WTVS(TV), Detroit, Michigan during the DTV transition period. Specifically, Cannell showed that when combined with the unique signal propagation characteristics across Lake Erie, WTVS(TV)'s DTV operations on Channel *43 would cause substantial

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1/ *Sixth Report and Order*, MM Docket No. 87-268, FCC 97-115 (released April 21, 1998) ("*Sixth R&O*").

interference to WUAB(TV)'s signal within its Grade B contour.[2/] Cannell urged the Commission to prohibit WTVS(TV) from increasing its DTV power while WUAB(TV) continued to broadcast an NTSC signal.[3/]

DET's Opposition provides no basis for the Commission to deny Cannell's request to protect its NTSC coverage. Contrary to DET's arguments, the Commission has recognized the unique propagation effects of signal transmission across large bodies of water, such as Lake Erie. Moreover, Cannell is only asking that the Commission limit WTVS(TV)'s power to that authorized during the DTV transition period while WUAB(TV) is still broadcasting an NTSC signal.[4/] Given the dramatic impact any increase in WTVS(TV)'s power would have on WUAB(TV)'s NTSC operations during the transition period, it is entirely reasonable and appropriate for the Commission to place this restriction on WTVS(TV).

II. The Commission Must Take Into Account the Unique Propagation Characteristics of Lake Erie.

There is no basis for DET's claim that the Commission does not permit "adjustments" based on signal propagation over large bodies of water. On the contrary, the Commission

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[2/] Supplement of Cannell Cleveland, L.P. to Petition for Reconsideration and Clarification at 2, and Engineering Statement of Donald Everist of Cohen, Dippell and Everist, P.C., attached as Exhibit A thereto.

[3/] Cannell also demonstrated that the DTV operations of WGGN(TV) on first adjacent Channel 42 in Sandusky, Ohio, would cause interference to WUAB(TV). Cannell predicted that approximately 215,000 households within WUAB(TV)'s Grade B contour could be affected by interference from WGGN(TV) and WTVS(TV). Cannell requested that similar restrictions be placed on WGGN(TV)'s ability to increase power during the DTV transition period.

[4/] Of course, in the event WUAB(TV) chooses to move back to Channel 43 after the DTV transition period, such power restrictions may continue to be necessary to ensure against continuing co-channel and adjacent channel interference caused by WTVS(TV) and WGGN(TV).

has long studied and recognized the impact large bodies of water such as Lake Erie may have on signal propagation. As described in the Engineering Statement of Donald Everist of Cohen, Dippell & Everist, P.C. (the "Engineering Statement"), Attachment A hereto, the Commission's concern with signal propagation over the Great Lakes region dates back to 1951. Indeed, in 1976, the United States and Canadian governments commissioned a study of signal propagation in the Great Lakes area, the results of which demonstrated:

> while long term average signal levels are relatively close to those predicted . . . , diurnal and seasonal variations of signal strength of up to about 30 dB can occur for paths in the immediate Great Lakes area.

See Engineering Statement at 3 (citing Report on the Great Lakes Propagation Measurement Program: Comparisons of the Canadian Data with the Predictions of FCC R-6602, CRC Report No. 1332).

The characteristics of signal propagation across large bodies of water such as Lake Erie are not a new development. There is simply no support for DET's argument that the Commission should ignore this unique phenomenon in evaluating interference to NTSC stations during the DTV transition.

III. Reasonable Limits on WTVS(TV)'s Ability to Increase Power Are Necessary to Ensure Protection of WUAB(TV)'s NTSC Operations.

The Commission has recognized that during the DTV transition period, it will be essential to protect existing NTSC coverage areas from DTV interference so that viewers do not lose television service in the transition. *Sixth R&O*, ¶ 87. Cannell has shown that any increase in WTVS(TV)'s DTV power is likely to cause significant interference to WUAB(TV)'s NTSC signal. DET fails to show otherwise. The engineering information included with DET's Opposition is unsupported by any data or maps to suggest that such

interference will not occur or that only Ottawa County, Ohio would be affected by interference. The fact that WGGN(TV)'s DTV operations on Channel 42 in Sandusky, Ohio also may cause interference to WUAB(TV) is irrelevant. WUAB(TV) should not have to suffer interference from either WGGN(TV) or WTVS(TV) during the DTV transition. Accordingly, to protect WUAB(TV)'s existing NTSC coverage, it is essential that some restrictions be placed on WTVS(TV)'s DTV power during the DTV transition period.

IV. Conclusion.

The unique characteristics of signal propagation across large bodies of water such as Lake Erie are well-established. Given the uniqueness of this phenomenon and the significant interference that may be caused to WUAB(TV)'s NTSC operations, the public's interest in continuing to receive WUAB(TV)'s NTSC signal would be best served if the Commission restricted WTVS(TV)'s ability to increase power during the DTV transition period.

Based upon the foregoing, Cannell respectfully urges the Commission to dismiss the Opposition filed by DET and to grant Cannell's Petition in this proceeding.

Respectfully submitted,

CANNELL CLEVELAND, L.P.

By: Elizabeth A. McGeary
John R. Feore, Jr.
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October 3, 1997

ATTACHMENT A

Engineering Statement of Cohen, Dippell & Everist, P.C.

ENGINEERING STATEMENT
ON BEHALF OF
CANNELL CLEVELAND, L.P.
CONCERNING RESPONSE TO OPPOSITION
TO PETITION FOR RECONSIDERATION
MM DOCKET NO. 87-268

OCTOBER 1997

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 21st day of October, 1997.

Notary Public

My Commission Expires: 2/28/98

This engineering statement has been prepared on behalf of Cannell Cleveland, L.P. ("Cannell") and accompanies a Response to Opposition to Petition for Reconsideration, MM Docket 87-268 submitted by Detroit Educational Television Foundation ("Foundation").

Cannell is the licensee of Broadcast Station WUAB(TV), Lorain, Ohio. WUAB(TV) in its supplemental filing entitled, "Engineering Statement on Behalf of Cannell Cleveland, L.P. Concerning Supplement to Petition for Reconsideration in MM Docket 87-267" ("Statement") examined the impact to its NTSC service area by DTV operations assigned in MM Docket 87-268. That further assessment is based upon examination of OET Bulletin No. 69 released July 2, 1997.

That Statement provided a tabulation of the DTV allocations that are proposed in MM Docket 87-268 in the vicinity of WUAB(TV)'s NTSC Channel 43 Grade B contour. It is these DTV allocations that raised concern for WUAB's NTSC operation. That study contained in the Statement found that protection will not result when unusual propagation conditions prevail. An example was made of the well known phenomena along Lake Erie that weather conditions often result in atypical propagation conditions such that signal levels exceed those predicted by the methodology used in OET Bulletin No. 69.

A further assessment was then performed on two DTV stations that are situated along Lake Erie: co-channel station WTVS(TV) assigned to Detroit, Michigan

and first-adjacent Channel 42, WGGN(TV) assigned to Sandusky, Ohio. The results of that analysis were provided in the Statement.

The Foundation is the licensee of WTVS(TV), Detroit, Michigan and it takes exception to the calculations that were performed which simulate an increase in DTV signal levels to the existing WUAB NTSC service area as a result of propagation conditions along the Great Lakes.

Foundation also makes some observations that there is no basis for unusual signal level deviation phenomenon; that virtually all interference would fall over Lake Erie; and that the interference over land areas would occur in Ottawa County.

Propagation Studies

VHF and UHF propagation studies have been performed in the Great Lakes area which support Cannell's concerns regarding potential interference from WTVS's proposed DTV operation on Channel 43 to WUAB's NTSC operation. The Canadian Department of Communications (DOC) and the U.S. Federal Communications Commission (FCC) established a joint working group in July 1976 to investigate, among other things, propagation issues in the region of the Great Lakes. A report was issued by the DOC Communications Research Centre in February 1980.[1] The results of that Report indicate that there are significant diurnal and seasonal variations

[1]Report on the Great Lakes Propagation Measurement Program: Comparisons of the Canadian Data with the Predictions of FCC R-6602, CRC Report No. 1332.

of signal strength observed in the Great Lakes area, neither of which are taken into account by R-6602.[2] In summary the Report noted:

> "It is clear from the results presented here that while long term average signal levels are relatively close to those predicted by R-6602, diurnal and seasonal variations of signal strength of up to about 30 dB can occur for paths in the immediate Great Lakes area. Signal strengths were found to be higher at night than during the day and higher in summer than in winter..."

Although dealing specifically with VHF propagation, the FCC had issued a report on April 16, 1951, which addressed propagation issues in the Great Lakes area.[3] This Report is not as detailed as the later DOC Report[4], but the data supports the DOC observations pertaining to substantial seasonal variations of signal strength.

Propagation phenomena exhibiting diurnal and seasonal variations such as those discussed above are not accounted for by either the Longley-Rice Model employed by the FCC in MM Docket No. 87-268 or R-6602. It is for this reason that Cannell expressed concern regarding potential interference to its WUAB NTSC operation. The above reports fully support the conclusion that signal levels in the Great Lakes can be

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[2]Report No. R-6602, Development of VHF and UHF Propagation Curves for TV and FM Broadcasting, FCC Office of Chief Engineer, Research Division, September 7, 1966.

[3]VHF Tropospheric Recording Measurements of Plane and Circular Polarized Waves in the Great Lakes Area (James S. Hill and George V. Waldo).

[4]The DOC Report also noted that over the same paths that the VHF signal strengths are about 5 dB lower than the corresponding UHF signal strengths with respect to the appropriate R-6602 prediction curve.

significantly higher than found for propagation paths found for example over the midwest.

Cannell's statement provided five coverage maps. Those five maps were performed by using the National Telecommunications and Information Administration, Institute for Telecommunications Sciences ("ITS") computer using the Communication System Performance Model--Point to Point Irregular Terrain HDTV Model ("HDTV model"). The HDTV model uses the Longley-Rice propagation methodology and evaluates in grid cell size 0.75-1.5 km with 3-second terrain data intervals between every 90 meters to 100 meters at one degree intervals. This HDTV model was selected since it is believed it generally replicates the Commission's DTV assignment model in regard to predicted coverage and interference. An ITS representative indicates that it is their belief that this model follows the Commission's decisions in the Report and Order.

Figure 2C of Cannell's filing provided the WUAB(TV) NTSC coverage and the interference predicted to be caused by a 50 kW WTVS(TV) DTV operation when the interfering field strength is increased. Potential DTV interference could occur in parts of the following counties: Portage, Trumball, Mahoning, Stark, Wayne, Ashland, Richland, Huron, and Erie.

Summary

There is independent documentation to support that the propagation path along the Great Lakes results in higher signal levels to distant locations. With an assumed

signal strength increase, DTV interference from WTVS(TV) is predicted to the existing WUAB NTSC operation.

As indicated, the calculations show that the likelihood of WTVS DTV interference to the current WUAB(TV) NTSC service area will occur if significant variations of signal level occur beyond that contemplated by the Federal Communications Commission in MM Docket 87-268.

CERTIFICATE OF SERVICE

I, Pamela R. McIntosh, hereby certify that a true and correct copy of the foregoing "Reply" was sent on this 3rd day of October, 1997, via first class United States mail, postage prepaid, to the following:

Robert A. Woods, Esq.
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Washington, D.C. 20036

Pamela R. McIntosh